

Claims

- [1] An burglarproof device for a bicycle comprising:
a locking means for fixing a bicycle to an object to prevent it from being stolen;
an installation means for installing the locking means on the frame of the bicycle;
and
an alarming means for displaying the locking status of the locking means to the exterior, wherein
the locking means comprises:
a body formed by coupling upper and lower covers to each other with a fastening member;
a wire drum installed at the center of the body and adapted to rotate by means of a wire drum shaft coupled through a hollow;
a wire wound around the wire drum;
a clamp jig having a fixing groove formed along a lateral surface of a front head portion thereof with the wire inserted into and coupled to the rear surface thereof;
a first wiring installed on a side of the outer surface of the upper cover, the front surface of the first wiring being open and the rear surface thereof having a through-hole dimensioned to allow the wire to pass through but not the clamp jig;
a second wiring formed on the other side of the outer surface of the upper cover, both front and rear surfaces of the second wiring being open to allow the clamp jig to pass through;
a tension mechanism installed inside the body to contact the front head portion of the clamp jig, which has passed through the second wiring, horizontally and apply an elastic force to the clamp jig; and
a solenoid unit having a fixing member formed on the upper side thereof, which is adapted to travel vertically under the action of an electronic solenoid to be inserted into or spaced from the fixing groove of the clamp jig.
- [2] The burglarproof device for a bicycle according to claim 1, wherein the installation means comprises:
a bracket formed on the lower surface of the lower cover;
first and second latches formed on the lateral surfaces of the bracket, respectively;
a band having serrated grooves formed on a surface thereof along a longitudinal direction and a ring formed on an end thereof to engage the first latch; and
a clasp having a fixing portion to be inserted into one of the grooves of the band and a ring portion to engage the second latch so that the other end of the band

and the second latch can be coupled to each other.

- [3] The burglarproof device for a bicycle according to claim 2, wherein the band is made of a polyester material having an iron core inserted therein.
- [4] The burglarproof device for a bicycle according to claim 1, wherein the alarming means comprises:
 - a disconnection detection loop installed inside the body with a side connected to the wire drum shaft and the other side connected to the tension mechanism;
 - a controller connected to the disconnection detection loop and provided with a means to generate an alarm when disconnection is detected; and
 - an alarm separately connected to the controller to generate an alarm to the exterior.
- [5] The burglarproof device for a bicycle according to claim 4, wherein the disconnection detection loop has at least one switch connected thereto in series, which is chosen from a group comprising a body separation detection switch for detecting the separation of the body of the locking means from the frame of the bicycle and a battery cover opening detection switch for detecting the opening of a battery cover.
- [6] The burglarproof device for a bicycle according to claim 4, wherein the controller has an RF transmitter unit for encoding an alarm signal into an RF signal and transmitting it to a remote control alarm in a remote area and an IR receiver unit for receiving a signal to deselect a locking function or alarming function from the remote control alarm and the remote control alarm has an RF receiver unit for receiving the RF signal, a control unit for analyzing the RF signal received by the RF receiver unit, checking a signal transmitted from the alarming means of the body and its own code, and actuating an alarm unit to generate an alarm, and an IR transmitter unit for encoding a signal to deselect a locking function or alarming function based on the operation of an operation key and converting it into an IR signal and outputting it.
- [7] The burglarproof device for a bicycle according to claim 6, wherein the RF signal is a signal modulated in an AM or FM mode.